PLEXENSE
a biotech company

Simple.
Fast.
Reliable.

Plexense ACCEL ELISA®
COVID-19 Kit

For Detection of Total Antibody to SARS-CoV-2 in Human Serum

Simple.
Fast.
Reliable.
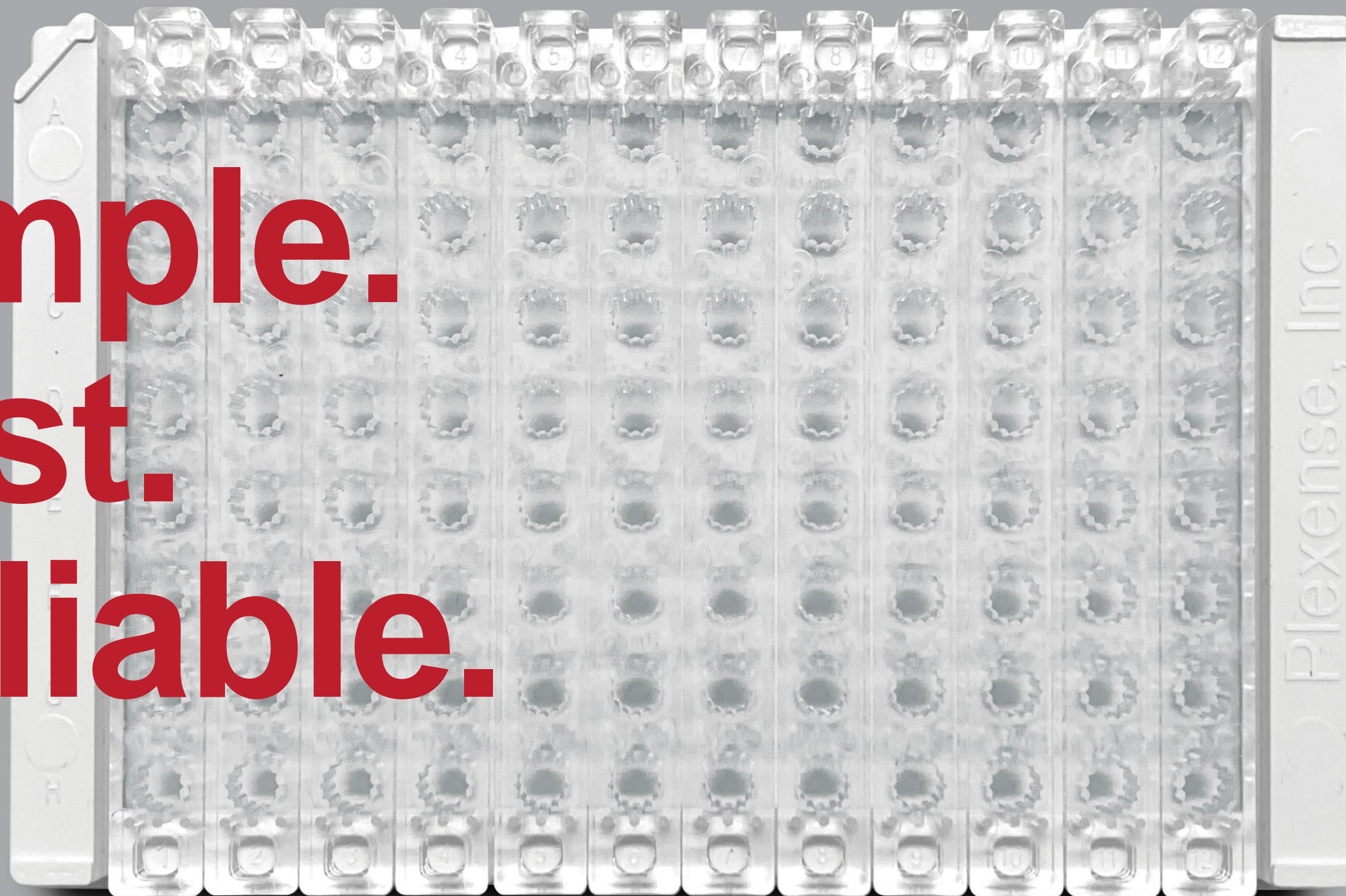
What is ACCEL ELISA®?

ACCEL ELISA® is the NEXT-GENERATION immunoassay platform

What is ACCEL ELISA®?

ACCEL ELISA®combines a unique and proprietary well plate design with advanced surface chemistry and reagent formulation to create an innovative immunoassay platform designed to maximize speed and sensitivity.

ACCEL ELISA®provides an increased sensitivity, simplicity, speed when compared to traditional ELISA techniques. Reproducible results can be achieved in 30minutes or less.

Competitiveness

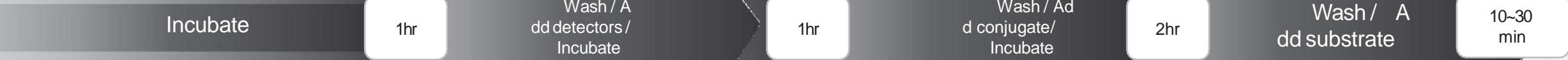|	
Speed	Assay results in 30minutes
Simplicity	2-step reaction with 1-wash
Sensitivity	5-40 times higher sensitivity
Compatibility	Compatible with most antibody/antigen pairs
Cost saving	Seamless integration to existing plate readers
Reproducibility	More excellent

Core Technology of ACCELELISA®

Proprietary well design

- Application of unique well design to maximizesurface.
- Increased surface area offersimproved sensitivity and maximized enzymatic reaction.
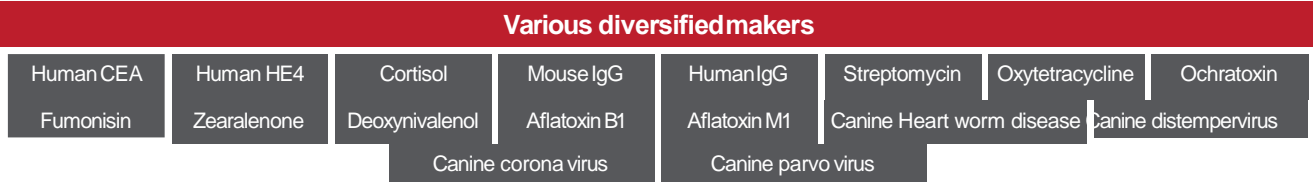- Build up technical barrier against competitors' similar technologieswith multiple well designpatents.

Surface treatment technology

- Plexense's proprietary surface chemistry eliminates blockingstep.
- Minimized non-specific reaction that affects the results by applying unique surface treatment to the well surface.

Optimizedreagent formulation

- Plexense's reagents are formulated to simplify immunoassay with single wash.
- Shorten protocol through technology that enables homogeneous mixing to simplify the immunoassay.

Diagnostic Platform

Various diversified makers

Human CEA	Human HE4	Cortisol	Mouse IgG	Human IgG	Streptomycin	Oxytetracycline	Ochratoxin
Fumonisin	Zearalenone	Deoxynivalenol	Aflatoxin B1	Aflatoxin M1	Canine Heart worm disease	Canine distempervirus	
		Canine corona virus		Canine parvo virus			

Platform 'ACCEL ELISA®'

Customized	Diagnosis of viral infectious disease.	Cancer MarkerScreening	Hormone Testing
	Antibody Assay	Screening for FoodSafety	VeterinaryDiagnostics

Simple Process & Fast

ACCEL ELISA®

Incubate	20min	Wash / Add substrate	10min

30min

Total incubation time

	Reaction time	Washing	Incubation
ACCEL ELISA®	30min	1(time)	2 (times)

Conventional ELISA

Incubate	1hr	Wash / Add detectors / Incubate	1hr	Wash / Add conjugate / Incubate	2hr	Wash / Add substrate	10~30 min

4.5hr

Total incubation time

	Reaction time	Washing	Incubation
Conventional ELISA	4.5hr	3~5 (times)	4~7 (times)

Why choose ACCEL ELISA® over other platform for COVID-19?

Technical Advantage

- Plexense has developed the world's first p roprietary plate design with advanced sur face chemistry and reagent formulation.
- ACCEL ELISA® provides excellent sensitivity compared to conventional ELISA methods.
- Plexense's technology patented world-wide with 36 patents in US, Japan and Korea.

Innovative Well Design

Best-in Class Bio-Markers (100% Korea Manufactured)

Simple Process

RT-PCR

ACCEL ELISA®

RT-PCR (STEP 4): Analysis · Interpret results
STEP 1: Obtain Specimen : Swab.
STEP 2: RNA extraction from specimen
STEP 3: Amplify by PCR

ACCEL ELISA® STEP 1: Obtain Specimen : Blood Sample.
STEP 2: Serum separation & Sample preparation
STEP 3: Incubate, Washing & Analyse

STEP 3 to STEP 4
2hr 30min

STEP 3 only
30min

30min
Assay Time

Speed

Reproducible results can be achieved in 30 minutes. ACCEL ELISA® provides an increased sensitivity, simplicity, speed when compared to traditional ELISA techniques.

2,880 test
Per 8hr

Unrestricted

The ultimate solution to address the mass testing requirements.
The ACCEL ELISA® testing can be deployed under minimized laboratory conditions with the least amount of resources and without highly trained technicians. This is the ultimate solution to address the rapidly surging case of COVID-19 worldwide.
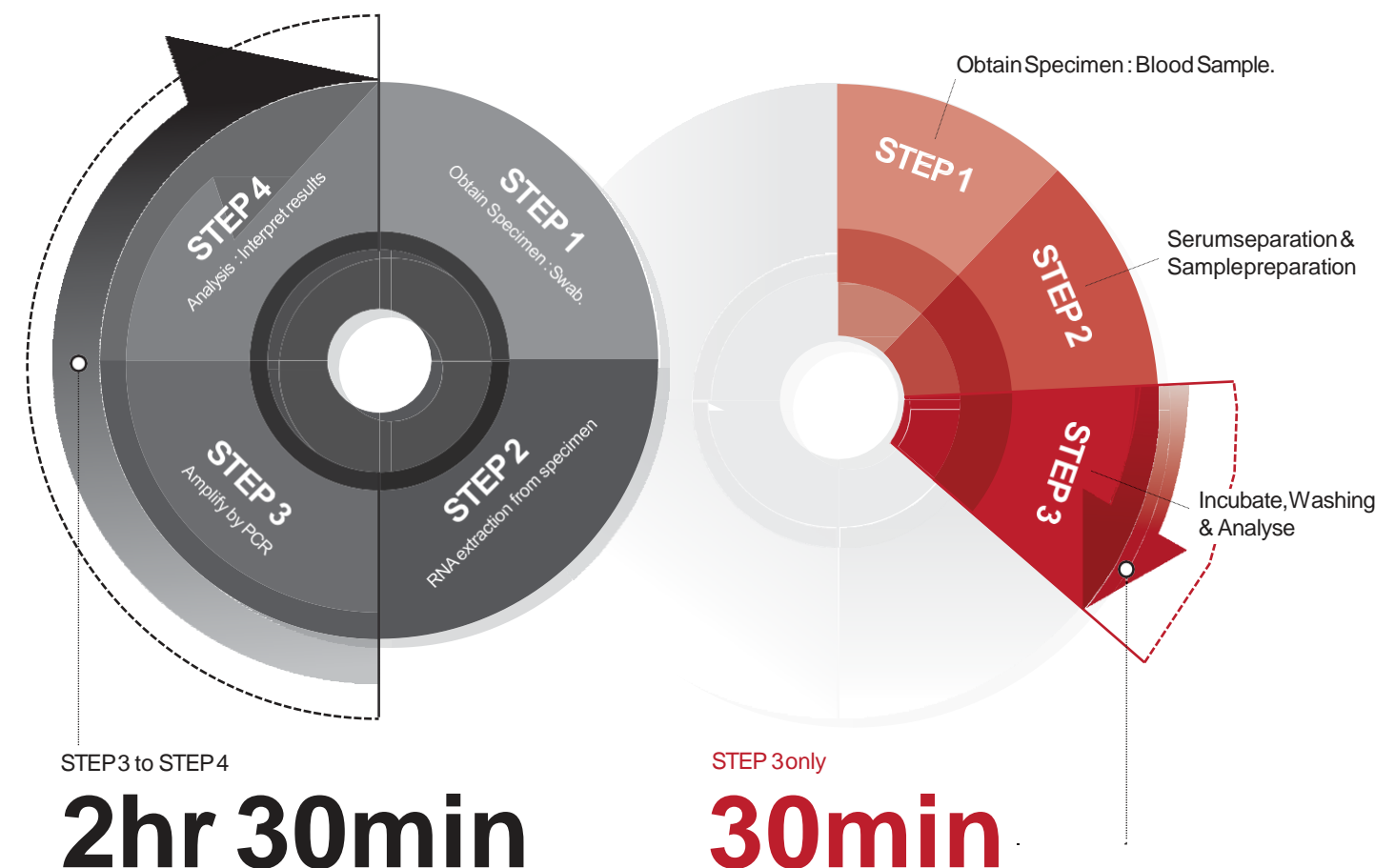
98.5%
Overall Agreement with RT-PCR

Accuracy

The ACCEL ELISA® detects IgG, IgM, IgA, antibodies to COVID-19 virus and provides a high level of accuracy similar to RT-PCR testing method.

ACCEL ELISA® COVID-19

		Positive	Negative	Total	%
PCR	Positive	85	5	90	94.4%
	Negative	0	251	251	100%
	Total	85	256	341	98.5%

Approved by Korea Research Institute of Bioscience and B iotechnology

5th day 100% upon infection

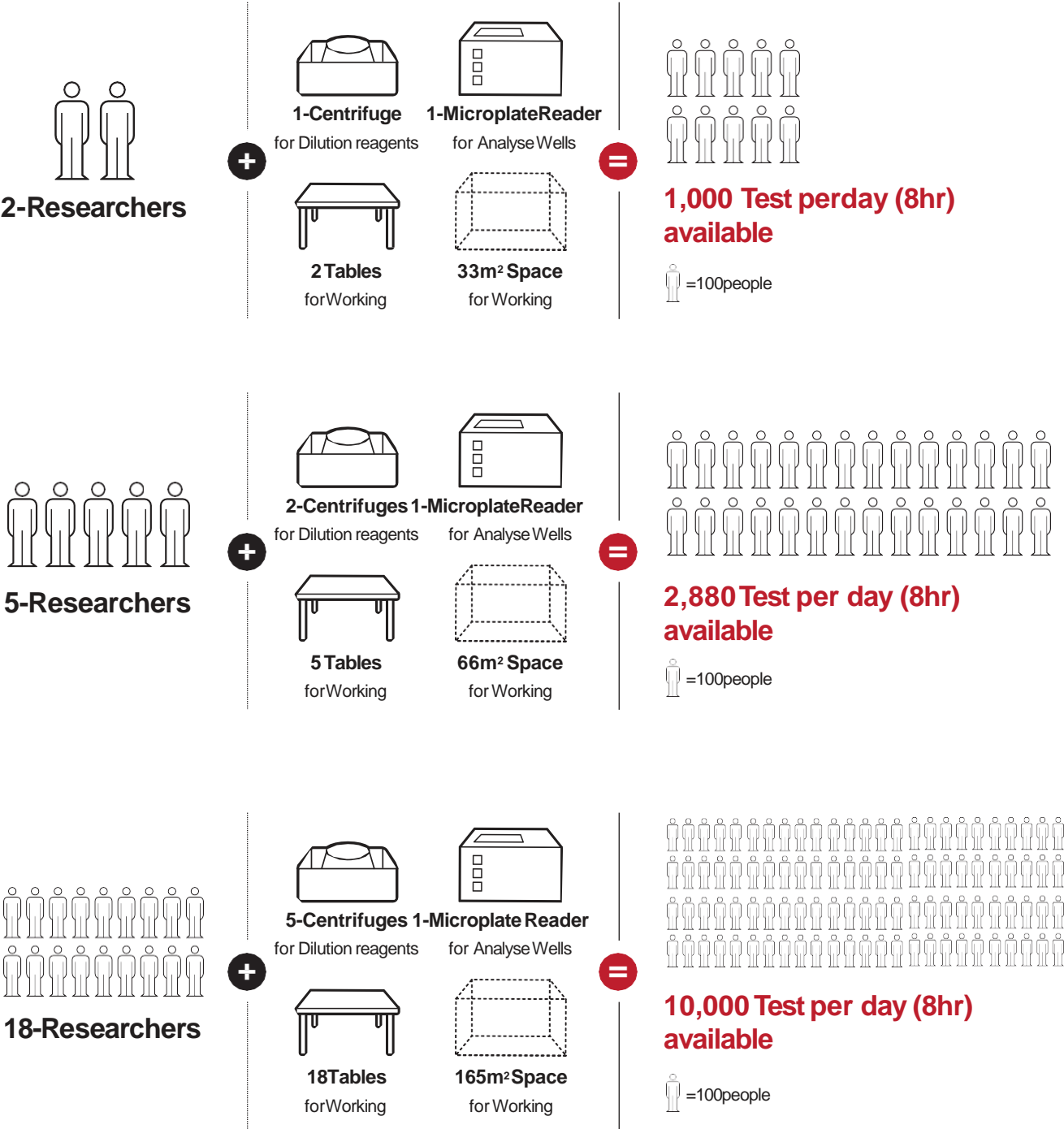| Days upon infection	Positive %	Negative%
1~4	66.7%	100%
5~10	100%	100%
≥ 11	100%	100%

- Clinical sample provider : Korea Institute of Radiological & Medical Sciences
- Evaluation institution : Bio Nano Health Guard Research Center
- Evaluation period : May 14~16,2020

Easy scale-up to any testing capacity

The ACCEL ELISA® allows for quick and easy scale-up to any testing capacity in very short period of time (e.g. 1,000 test per day capacity to 10,000 tests per day capacity can be scaled-up in less than 1week) - making it the most ideal platform for mass testing at ultra- high throughput areas such as airports, borders, sports stadiums, schools, etc.
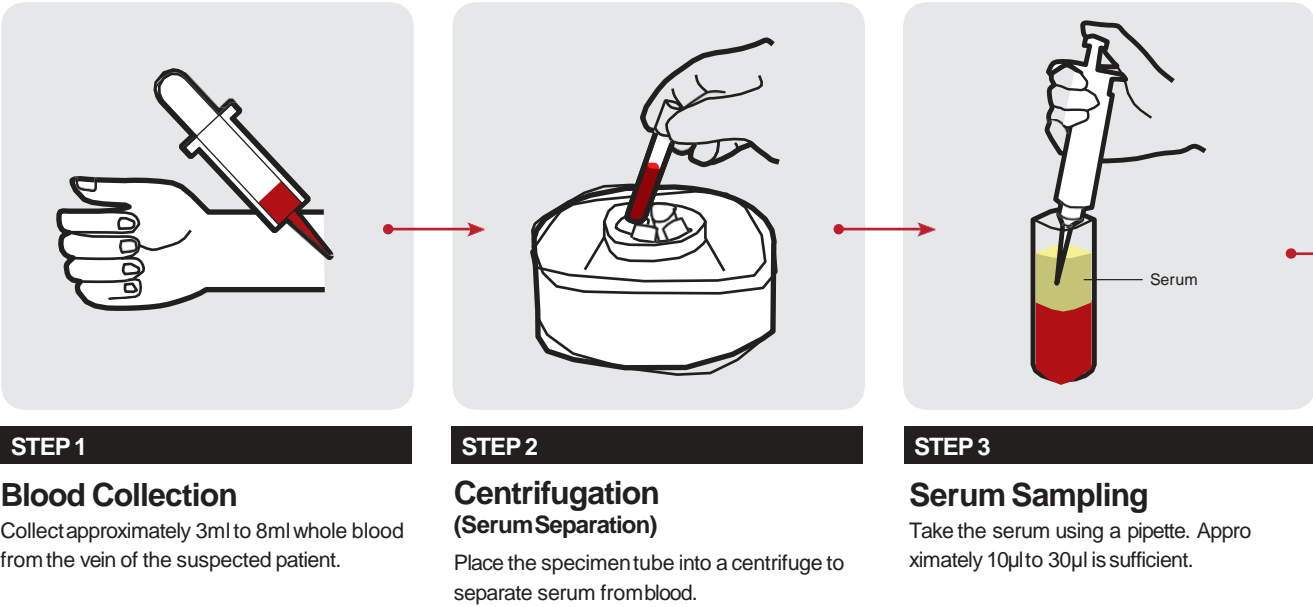
2-Researchers

+
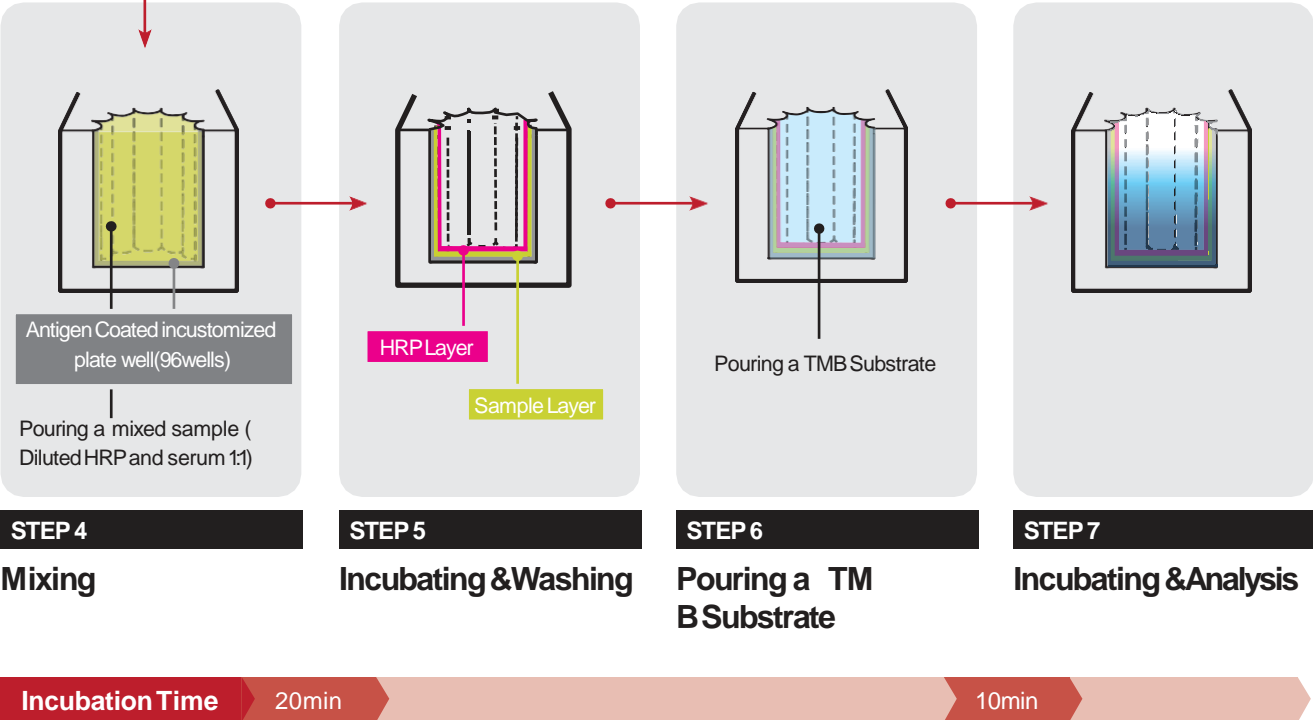
1-Centrifuge
for Dilution reagents

1-MicroplateReader
for Analyse Wells

2 Tables
forWorking

33m² Space
for Working

=

1,000 Test perday (8hr) available

= 100 people

5-Researchers

+

2-Centrifuges
for Dilution reagents

1-MicroplateReader
for Analyse Wells

5 Tables
forWorking

66m² Space
for Working

=

2,880 Test per day (8hr) available

= 100 people

18-Researchers

+

5-Centrifuges
for Dilution reagents

1-Microplate Reader
for Analyse Wells

18 Tables
forWorking

165m² Space
forWorking

=

10,000 Test per day (8hr) available

= 100 people

ACCEL ELISA®COVID-19
How does it work?

Sample Preparation Sequence
The process of extracting samples to be used for plate well.

STEP 1

Blood Collection
Collect approximately 3ml to 8ml whole blood from the vein of the suspected patient.

STEP 2

Centrifugation (SerumSeparation)
Place the specimen tube into a centrifuge to separate serum fromblood.

STEP 3

Serum Sampling
Take the serum using a pipette. Approximately 10μl to 30μl is sufficient.

Serum

Diagnosis Process

Antigen Coated incustomized plate well(96wells)

Pouring a mixed sample (Diluted HRP and serum 1:1)

HRP Layer

Sample Layer

Pouring a TMB Substrate

STEP 4

Mixing

STEP 5

Incubating &Washing

STEP 6

Pouring a TMB Substrate

STEP 7

Incubating &Analysis

| Incubation Time | 20min | | 10min |

Product Package

The ACCEL ELISA®COVID 19 assay uses SA R S CoV 2 nucleocapsid protein(N protein) custo m developed by the BioNano Health Guard Res earch Center (a division of the Ministry of S cie nce and ICT, Korea) in collaboration with Kore a Research Institute of Bioscience and Biotechn ology (KRIBB) for the prior use of COVID 19 anti body detection on ACCEL ELISA®platform.

❶ ACCEL ELISA®COVID-19 Kit

For the Detection of Total Antibody to SARS-CoV-2 in Serum

❷ ❸ ❹ ❺ ❻ ❼ ❽

❶
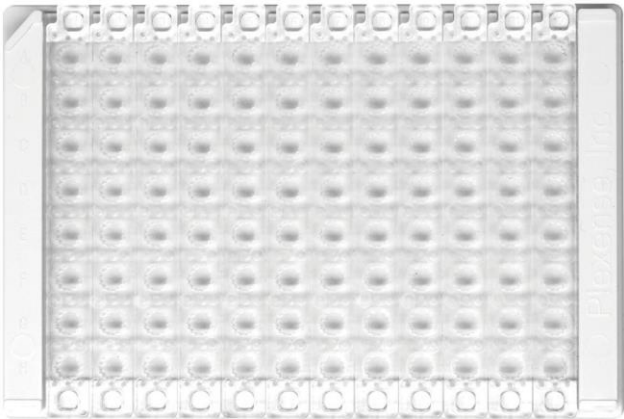
COVID-19 antigen coated microplate

Quantity : 1ea
96 well microplate (packaged in aluminium foil)

Packaged in aluminium foil

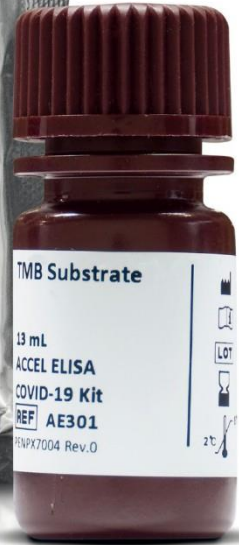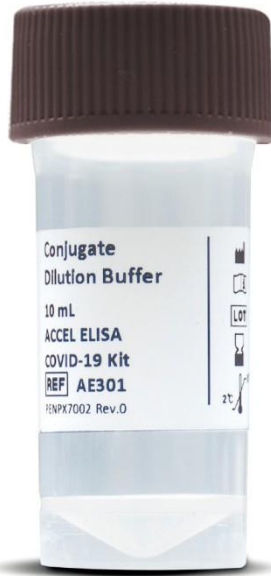| Platform	Product Name	Detection	Product Code
ACCEL ELISA®	Plexense ACCEL ELISA®COVID-19 Kit	IgG/IgM/IgA (Total antibody)	AE301
	Plexense ACCEL ELISA® COVID-19 Saliva Antigen Kit	COVID-19 Antigen	AE302
	Plexense ACCEL ELISA® COVID-19 Neutralizing Antibody Kit	COVID-19 Neutralizing antibody	AE303

❷ HRP-conjugate

Quantity : 1 vial

Liquid reagent

❸ Positive Control

Quantity : 1 vial

Liquid reagent

❹ Negative Control

Quantity : 1 vial

Liquid reagent

❺ TMB Substrate

Quantity : 1 vial

Liquid reagent

❻ Conjugate Dilution Buffer

Quantity : 1 vial

Liquid reagent

❼ 10X Wash Buffer

Quantity : 1 vial

Liquid reagent

❽ Sample Dilution Buffer

Quantity : 1 vial

Liquid reagent